

1/ 4. (Original) A method of increasing or maintaining the number of functional cells of a predetermined type in a mammal, said method comprising the steps of:

- a) providing a sample of cells of said predetermined type,
- b) treating said cells to modify the presentation of an antigen of said cells that is capable of causing an *in vivo* autoimmune cell-mediated rejection response,
- c) introducing said treated cells into said mammal, and
- d) prior to, after, or concurrently with step c), treating said mammal to kill or inactivate autoimmune cells of said mammal.

2/ 5. (Original) The method of claim 4, wherein said mammal is a human patient.

3/ 6. (Original) The method of claim 5, wherein said cells are insulin-producing islet cells.

a/ 4/ 7. (Original) The method of claim 4, wherein step b) comprises eliminating, reducing, or masking said antigen.

5/ 8. (Original) The method of claim 4, wherein step d) comprises administering to said mammal TNF-alpha or a TNF-alpha inducing substance.

6/ 9. (Original) The method of claim 8, wherein the TNF-alpha inducing substance is tissue plasminogen activator, LPS, interleukin-1, UV light, or an intracellular mediator of the TNF-alpha signaling pathway.

10. (Cancelled) The method of claim 1, wherein said mammal has a mutation in the *lmp2* gene.

7/ 11. (Original) The method of claim 4, wherein said mammal has a mutation in the *lmp2* gene or equivalent thereof.

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12. (Original) A method of increasing the number of functional cells of a predetermined type in a mammal, said method comprising the steps of:

- a) treating said mammal with an agent that kills or inactivates autoimmune cells of said mammal;
- b) periodically monitoring the cell death rate of said autoimmune cells; and
- c) periodically adjusting the dosage of said agent administered to said mammal based on the monitoring of step b).

~~9~~ 13. (Original) The method of claim ~~12~~ ~~8~~, wherein said agent comprises TNF-alpha, a TNF-alpha inducing substance, tissue plasminogen activator, LPS, interleukin-1, UV light, or an intracellular mediator of the TNF-alpha signaling pathway.

~~10~~ 14. (Original) The method of claim ~~8~~ ~~5~~, wherein step d) comprises administering to said mammal two agents that increase TNF-alpha.

~~11~~ 15. (Original) The method of claim ~~12~~ ~~8~~, wherein step a) comprises administering to said mammal two agents that increase TNF-alpha.

~~12~~ 16. (Original) A method for diagnosing an autoimmune disease or the predisposition to said disease in a mammal, said method comprising the steps of:

- a) providing peripheral cells from a mammal,
- b) treating said cells with a TNF-alpha treatment regimen, and
- c) detecting cell death of said peripheral cells, wherein an increase in cell death, when compared with control cells, is indicative of said mammal having an autoimmune disease or a predisposition to said disease.

~~13~~ 17. (Original) The method of claim ~~16~~ ~~12~~, wherein said peripheral cells comprise splenocytes, T lymphocytes, B lymphocytes, or cells of bone marrow origin.